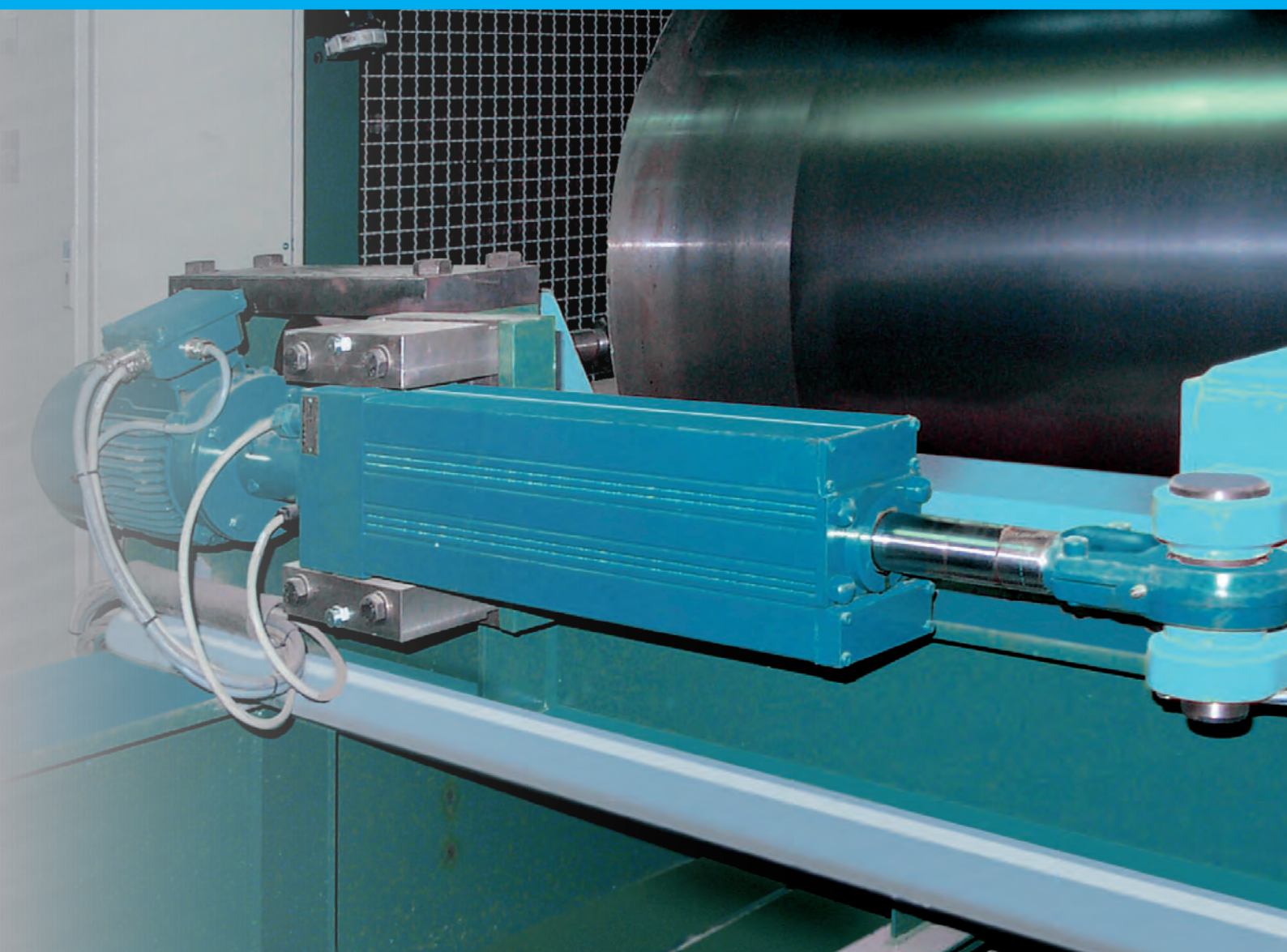


# Electro-Servo-Cylinder ESZ



- ▶ cost effective
- ▶ reliable
- ▶ silent

# Electro-Servo-Cylinder ESZ

## Function principle:

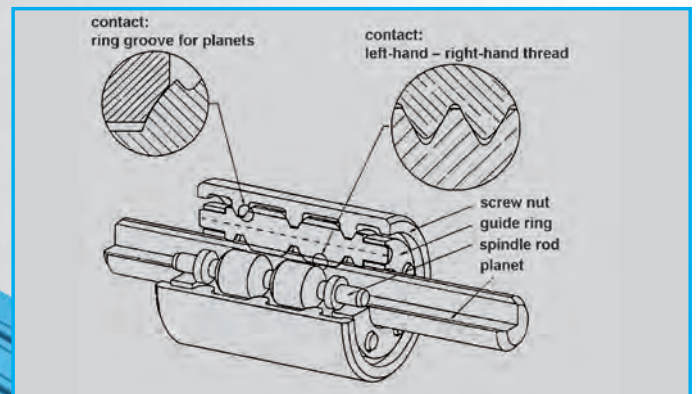
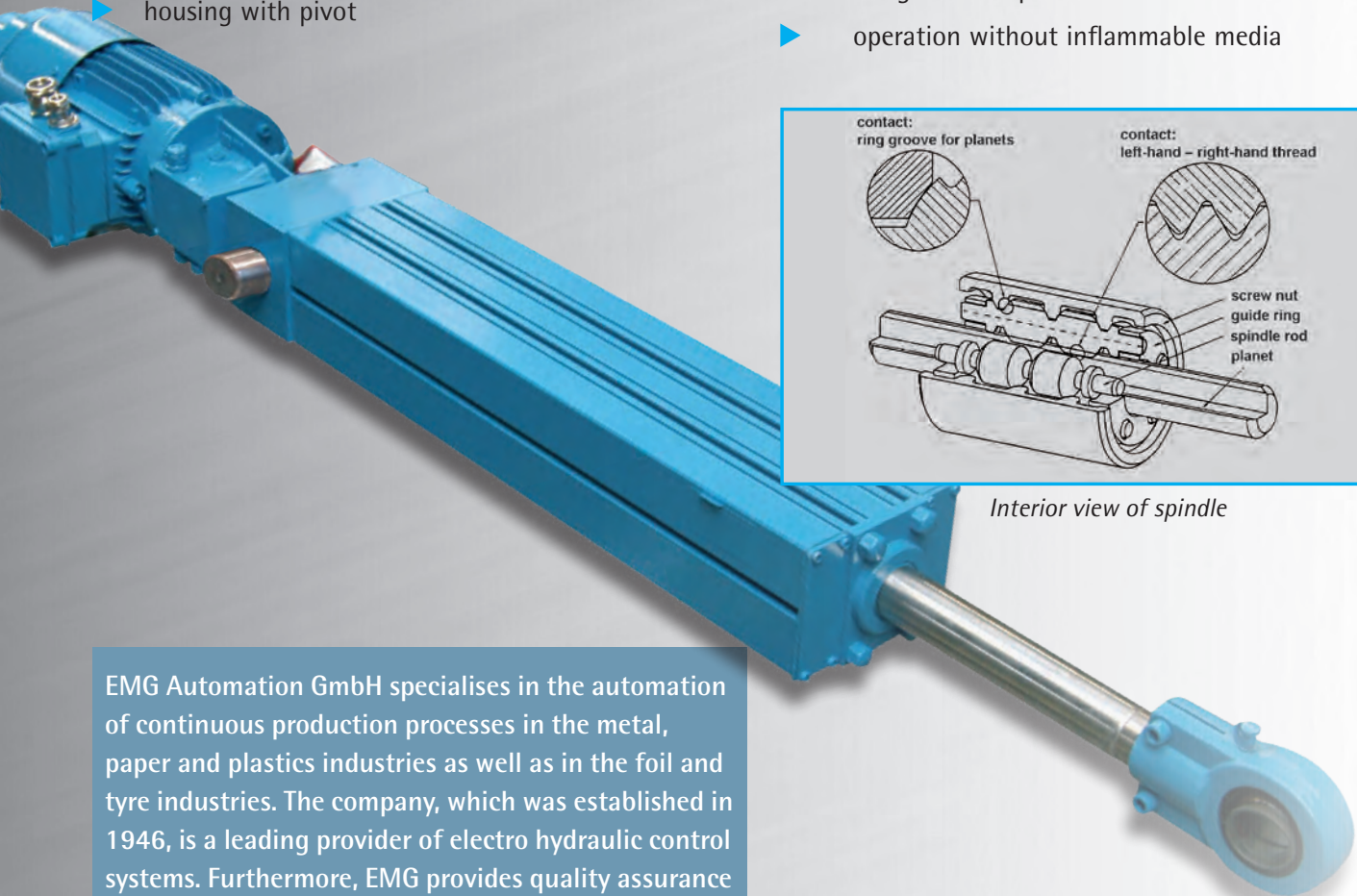
The Electro-Servo-Cylinder developed by EMG is used as a control and positioning cylinder. It converts by means of a Planetary Gear Thread (PGT) the rotation generated by a threephase current motor into a linear movement. The function principle is based on a rolling motion at low friction and consequently low wear.

The standard model of the Electro-Servo-Cylinder consists of the following components:

- ▶ threephase asynchronous motor
- ▶ spindle with planetary gear thread, thrust housing and piston rod with knuckle
- ▶ rotating lock of piston rod
- ▶ housing with pivot

## Customer's benefit:

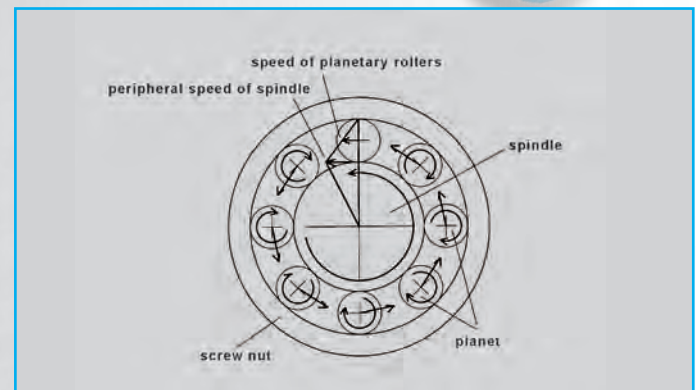
- ▶ compact design without gear
- ▶ high drive speed, small motor torque
- ▶ high positioning accuracy
- ▶ low friction, robust and reliable
- ▶ clean and environmentally friendly
- ▶ requiring little maintenance
- ▶ long service life
- ▶ easy replacement of hydraulic or pneumatic cylinders
- ▶ compact design at high power transmission
- ▶ integration of position transducer and limit switch
- ▶ operation without inflammable media



Interior view of spindle

EMG Automation GmbH specialises in the automation of continuous production processes in the metal, paper and plastics industries as well as in the foil and tyre industries. The company, which was established in 1946, is a leading provider of electro hydraulic control systems. Furthermore, EMG provides quality assurance systems for the manufacturing industry.

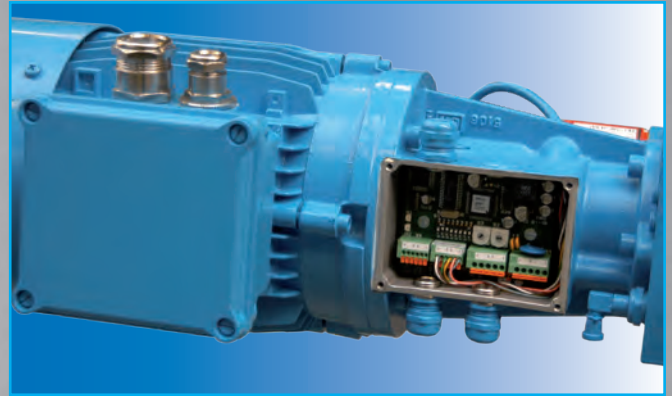
Based on the combination of more than 70 years of experience, the quality of our products and complete solutions as well as our advisory skills, our customer, by his trust, makes us the market leader. In close co-operation with our customers, research facilities and universities we are permanently searching for innovative solutions to promote our new and further developments and therefore to design and form the market as innovation leader actively.



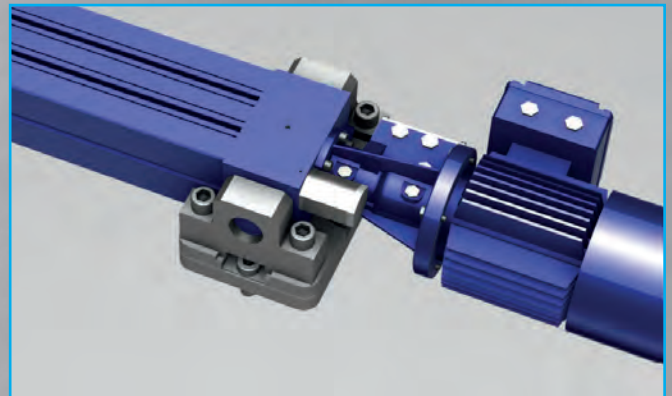
Cross-section of spindle

## Options:

- ▶ folded bellows to protect the pushrod from dirt
- ▶ external position indication switches, mechanically positioned during on-site installation
- ▶ electrical locking brake, optionally releasable at loss of voltage
- ▶ cardanic mounting to avoid critical lateral forces on the piston rod of the electro-servo-cylinder
- ▶ activation and positioning of the actuator via frequency converter with overlaid control via EMG's control amplifier
- ▶ separate ventilation motor for enduring motor cooling in difficult ambient environment
- ▶ alternative types of mounting on request



*Electronics with DIP switch for easy set up*



*ESZ with cardanic mounting*

## Technical data:

- ▶ Max. force (no nominal force): 10; 25; 50 and 100 kN
- ▶ Protection class: IP 54
- ▶ Ambient temperature: 0 ... +50 °C; ...70 °C with separate cooling fan
- ▶ Nominal stroke: 100 ... 700 mm
- ▶ Nominal speed: 30 mm/s, controlled by frequency converter



## Lubrication and maintenance:

- ▶ recommended lubrication of the planetary gear thread with 10-20 cm<sup>3</sup> after approx. 5000 operating hours
- ▶ option: automatical control of lubrication of the ESZ via overlaid counter of operating hours with an adjustable lubrication of the cylinder of up to three years ("automatic lubrication")
- ▶ option: battery controlled automatic lubrication with precise lubricant allocation over one operating year. Battery and lubricant available as one device.



*Planetary gear thread*

## Technical features:

- ▶ used as control or position actuator with high demands on resolution and repeatability
- ▶ alternative to hydraulic or pneumatic cylinders
- ▶ exact positioning of parts
- ▶ precise adjustment of butterfly valves, nozzles and rotors etc.
- ▶ bigger handling systems
- ▶ steering rolls for strip guiding, especially in thermal processing lines
- ▶ coiler with medium weights
- ▶ all kinds of linear actuation





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